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P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

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BERHANE, YOSIEF H	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/568,015	HERRMANN, CHRISTOPH	
	Examiner	Art Unit	
	YOSIEF BERHANE	2467	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Arguments

1. **Regarding claims 1, 18 and 23,** on page 12-13 of applicants response, applicant argues that Altahan does not disclose or suggest "more than one receiver, let alone, whether the additional receiver(s) determines whether to transmit its own message"

2. **The applicants arguments made above are not persuasive for the following reasons**

3. The applicant has amended claim 1 to recite "receiving a confirmation message from the at least one third receiving station by the transmitting station". Inoue teaches in Section 3.1.1, a first, second, and third group of receiving stations of a multicast transmission, where as further disclosed in section 3.2 as well as fig. 4, a first, second and third receiving station returns an ACK frame (claimed confirmation message) to the base station (claimed transmitting station). Thus Inoue teaches "receiving a confirmation message from the at least one third receiving station by the transmitting station"

4. Furthermore, the applicant has amended claim 18 to recite "wherein the at least one third receiving station transmits a confirmation message of its own to the transmitting station". Inoue teaches in section 3.1.1 as well as fig. 3, a first, second and third group of receiving stations, wherein the third group comprises one receiving station. Further, as disclosed in section 3.1.1, responses (claimed confirmation message) for a multicast datagram are returned from each station group, thus in station group 3, the station will send a response of its own to the base station. Thus, Inoue teaches "wherein the at least one third receiving station transmits a confirmation message of its own to the transmitting station". Also see fig. 4 and section 3.2

5. Moreover, the applicant has amended claim 23 to recite "wherein the receiving station transmits another confirmation message to the transmitting station". Inoue teaches in Section 3.2 as well as fig. 4, a plurality of station groups receiving a multicast transmission from a base station, where as disclosed step 5 section 3.2 as well as fig. 4, a first ACK is returned to the base station by a Representative Station, however due to failure to properly receive the transmission, a Non-Representative Station returns a NACK. Thereafter, the base station retransmits the data and a second ACK is returned from the polled Representative Station (claimed another confirmation message). Note, as disclosed in section 3.1.2, only a Representative Station returns an ACK. Thus, Inoue teaches "wherein the receiving station transmits another confirmation message to the transmitting station"

6. **Regarding Claim 22, On page 13**, applicant argues that Atlahan does not disclose or suggest "the transmitting station ignoring another message received from another receiver"

7. **The applicants arguments made above are persuasive but moot in light of new rejection**

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

9. (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claims 1-10, 17-21 and 23-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Non-Patent Literature "Reliable Multicast Protocol with a Representative Acknowledgment Scheme for Wireless Systems" to Inoue et al.** (hereinafter Inoue) and further in view of Publication **2004/0128454** to Altahan et al. (hereinafter Altahan) as well as Publication **2002/0133615** to Satran et al (hereinafter Satran).

11. **As per claim 1**, Inoue teaches a method of performing a point-to-multipoint data transmission from a transmitting station (BS, fig. 3, page 855, Inoue

12. to a plurality of first receiving stations (g. 3, page 855, Inoue discloses a plurality of receiving stations),

13. the method comprising the steps of (page 856, Inoue discloses where the base station transmits a multicast data frame destined to all members of the multicast receiver group in the cell):

14. transmitting data from the transmitting station (BS, fig. 3, page 855, Inoue)

15. to the plurality of first receiving stations (fig. 3, page 855, Inoue discloses a plurality of stations. Also, page 856, Inoue discloses where the base station transmits a multicast data frame destined to all members of the multicast receiver group in the cell);

16. receiving a confirmation message with respect to the data from at least one second receiving station (Page 856, section 3.2, Inoue discloses that the base station receives a NACK frame (claimed confirmation message). Note in Fig. 4, Inoue discloses that each group of receiving stations will be polled, thus a first, second and third receiving stations will receive a multicast and respond with an ACK or NACK to confirm positive or negate reception of data)

17. Although Inoue discloses a plurality of first receiving stations (fig. 3, page 855, Inoue discloses a plurality of stations)

18. Inoue does not disclose expressly: wherein the confirmation message relates to one of a successful and unsuccessful decoding of the data after initiation of decoding of the data by the at least one second receiving station

19. Paragraph 0030, Altahan discloses that a mobile station (claimed receiving station) receives data blocks and a receiver may decode (claimed initiation of decoding of the data) the data blocks and may report the successful or unsuccessful decoding of the blocks to a base station, using an ARQ scheme. When a received data block is not decoded successfully, a NACK message (claimed confirmation message) may be sent to the base station, requesting retransmission of the data block. Conversely, when a received data block is successfully decoded, ACK message (claimed confirmation message) may be sent to the base station.

20. Inoue and Altahan are analogous art because they are from similar problem solving areas dealing specifically with transmission/retransmission schemes to communicate data packets in a network

21. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of Inoue by sending a confirmation message relating to successful/unsuccessful decoding of a data packet after a decoding has been initiated, as suggested by Altahan

22. The rationale for doing so would have been to increase the reliability of communicating data packets in a network by utilizing ACK/NACK messages to request retransmissions of erroneously decoded data (Paragraph 30, Altahan).

23. Therefore, it would have been obvious to combine Altahan with Inoue for the benefit of enhancing reliability in communicating data packets in a network, to obtain the invention as specified in claim 1.

24. Although the combination of Inoue and Altahan disclose one third receiving station of the plurality of first receiving stations (fig. 3, page 855, Inoue discloses station group 1, which includes a first, second, and third receiving station.)

25. and receiving a confirmation message from the at least one third receiving station by the transmitting station (Inoue teaches in Section 3.1.1, a first, second, and third group of receiving stations of a multicast transmission, where as further disclosed in section 3.2 as well as fig. 4, a first, second and third receiving station returns an ACK frame (claimed confirmation message) to the base station (claimed transmitting station)).

26. The combination of Inoue and Altahan do not disclose expressly: transmitting the confirmation message from the transmitting station to at least one third receiving station

27. Satran discloses, in Paragraph 0015, a sender (claimed transmitting station) multicasts a negative acknowledgement (claimed confirmation message) to the other receiving stations.

28. Inoue, Altahan and Satran are analogous art because they are from similar problem solving areas dealing specifically with transmission/retransmission schemes to communicate data packets in a network.

29. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the combination of Inoue and Altahan, by sending a confirmation message from transmitting station to a receiving station, as suggested by Satran.

30. The rationale for doing so would have been to reduce network congestion in order to optimize data flow in a communication network (Paragraph 0013, Satran).

31. Therefore, it would have been obvious to combine Satran with Altahan and Inoue for the benefit of optimizing data flow and minimizing network congestion, to obtain the invention as specified in claim 1.

32. **As per claim 2**, the combination of Inoue, Altahan and Satran teach wherein the confirmation message is at least one of a negative acknowledgement message indicating that the at least one second receiving station unsuccessfully decoded the data and (Page 856, Inoue discloses where if an NRS (Non-representative station used to return NACK responses) failed to receive the multicast data frame correctly, the NRS returns a NACK.)

33. a positive acknowledgement message indicating that the data was errorlessly decoded at the at least one second receiving station (Page 856, Inoue discloses where the polled RS returns an ACK or NACK frame depending on its result of reception).

34. **As per claim 3**, the combination of Inoue, Altahan and Satran teach wherein, when the confirmation message is a negative acknowledgement message, the transmitting station retransmits the data (Page 856, Inoue discloses the casewhen the base station received a NACK frame, the base station retransmits the multicast data frame again).

35. **As per claim 4**, the combination of Inoue, Altahan and Satran teach wherein the plurality of first receiving stations is grouped into a plurality of groups (Station group1, Station group2 and Station group3, fig. 3, page 855) of first receiving stations such that (Page 855, section 3.1, Inoue disclose a station must be a member of a station group. The procedure to join or form a station group is described)

36. a first group (Station group1, Fig. 3)

37. includes at least one third receiving station (Fig. 3, station group 1 can have multiple stations)

38. of the plurality of first receiving stations and a second group (Station group2, fig. 3)

39. includes at least one fourth receiving station (Fig. 3, station group2 can have multiple stations)

40. of the plurality of first receiving stations (Figure 3, on page 855 shows an example of multiple groups of receiving stations which are capable of including any number of receiving stations to join the multiple groups. Also see Fig. 4);

41. wherein a first feedback phase is assigned to the first group and a second feedback phase is assigned to the second group in accordance with a feedback scheme (Page 856, fig. 4 discloses a means of polling which allows each group to signal back to the source at predetermined intervals of time. **Note that examiner understands feedback phase to be time slots for signaling to the base station or other mobile stations. Also, the examiner understands feedback scheme as means for receiving/sending confirmation messages regarding the decoding of the multicast data);**

42. wherein the at least one third receiving station (Fig. 3 and Fig. 4, shows multiple receiving stations in multiple groups)

43. sends the confirmation message to the transmitting station (Fig. 4, Inoue discloses multiple station groups, where a receiving station is designated to return an ACK/NACK (claimed confirmation message) to the base station (claimed transmitting station))

44. in accordance with the first feedback phase (Fig. 4, Inoue discloses a base station polling each station group individually to return an ACK/NACK)

45. and the at least one fourth receiving station sends the confirmation message in accordance with the second feedback phase (Fig. 3, shows multiple mobile stations in multiple groups, where as further disclosed in section 3.2 as well as fig. 4, each group designates a representative station to return a ACK/NACK (claimed confirmation message) when a base station polls the station group).

46. **As per claim 5**, the combination of Inoue, Altahan and Satran teach wherein, after the transmitting station has received and decoded the confirmation message from the at least one third receiving station of the first group, the transmitting station sends the confirmation message, which it received from the at least one third receiving station of the first group, to the at least one fourth receiving station of the second group (page 856, section 3.2, Inoue discloses where the base station polls the RS of another group after receiving an ACK from the current group. The base station repeats this operation until it receives an ACK frame from the last group. Note that this polling frame sent from the base station to another group signals that all the previous groups have confirmed receiving the multicast message);

47. wherein the feedback scheme is adapted such that the confirmation message of the at least one third station of the first group is decoded at the transmitting station and sent to the at least one fourth receiving station of the second group before the at least one fourth receiving station sends the confirmation message to the transmitting station (page 856, section 3.2, Inoue discloses where the base station polls the RS of another group after a certain time, thus a representative station in a second group will not transmit a confirmation message until it has been sent a polling frame).

48. **As per claim 6**, the combination of Inoue, Altahan and Satran teachwherein, when the confirmation message decoded at the at least one fourth receiving station is the negative acknowledgement message, the at least one fourth receiving station of the second group does not send its own negative acknowledgement message (Page 856 section 3.2; Inoue discloses where a station sending a NACK frame must listen to the channel and must quit transmission if another station sends a NACK frame).

49. **As per claim 7 and 21**, the combination of Inoue, Altahan and Satran teach wherein the at least one third receiving station and the at least one fourth receiving station only send the confirmation message in case the decoding of the data of the at least one third receiving station and the at least one fourth receiving station is unsuccessful such that the at least one third receiving station and the at least one fourth receiving station only send the negative acknowledgement message indicating that the data could not be decoded error-free (Page 855, section 3.1.2, Inoue discloses Non-Representative stations, which only return NACK frames).

50. **As per claim 8,** the combination of Inoue, Altahan and Satran teach wherein, after a retransmission of the data, the transmitting station listens only to third groups of the plurality of groups which have not sent the positive acknowledgement message with respect to the data (This limitation is disclosed in fig. 4 on page 856, section 3.2 by Inoue, whereby the transmitting station only polls one group at a time. In the case where a retransmission is needed, the transmitting station waits to receive an ACK/NACK only from the group that is being polled at the time of retransmission.);

51. wherein the third groups are considered to have sent the positive acknowledgement message in case all of the receiving stations belonging to the groups have sent the positive acknowledgement message (page 855, section 3.1.2, Inoue discloses that the Representative station is selected from the members of a group. The role of the RS is to return an ACK or a NACK frame for the received multicast datagram when it is polled by the base station).

52. **As per claim 9 and 20,** the combination of Inoue, Altahan and Satran teach wherein the confirmation message is a negative acknowledgement message indicating that the at least one second receiving station could not decode the data error-free (page 856, Inoue discloses where the polled Representative station returns an ACK or NACK frame depending on its result of reception);

53. and wherein the transmitting station retransmits the data upon reception and decoding of the confirmation message (Page 856, Inoue disclose that when the base station received a NACK frame, it retransmits the multicast data frame again).

54. **As per claim 10**, the combination of Inoue, Altahan and Satran teach wherein the confirmation message is a positive acknowledgement message indicating that the at least one second receiving station decoded the data error-free (Page 856, section 3.2, Inoue discloses when the frame that the base station received was an ACK frame and no NACK frame followed, the base station polls the RS of another group after a certain time);

55. and wherein the transmitting station retransmits the data after not receiving the confirmation message from one of the plurality of first receiving stations (Page 856, section 3.2, Inoue discloses when the base station received a NACK frame, it retransmits the multicast data frame again).

56. **As per claim 17,** the combination of Inoue, Altahan and Satran teach wherein the data i

57. a data packet (page 856, Inoue discloses that the polled RS returns an ACK or a NACK frame);

58. wherein the method is a retransmission protocol in a cellular radio communication system (Page 856, Inoue discloses that a retransmission control mechanism such as RMTP will be required to increase reliability of data delivery).

59. **As per claim 18**, Inoue teaches data transmission system for a point-to-multipoint data transmission from a transmitting station to a plurality of first receiving stations (page 856, Inoue discloses where the base station transmits a multicast data frame destined to all members of the multicast receiver group in the cell),

60. wherein the transmitting station (BS, fig. 3, page 855, Inoue)

61. is adapted to transmit data from the transmitting station to the plurality of first receiving stations (page 856, Inoue discloses where the base station transmits a multicast data frame destined to all members of the multicast receiver group in the cell);

62. wherein each of the plurality of first receiving stations (fig. 3, page 855, Inoue discloses multiple receiving stations)

63. is adapted to send a confirmation message to the transmitting station (Page 856, section 3.2, Inoue discloses that the receiving stations, which can be a Representative Station, or a Non-Representative station, return a NACK if the data was not received correctly);

64. Although Inoue discloses a respective receiving station of the plurality of first receiving stations (Section 3.2 as well as fig. 4, Inoue discloses a plurality of receiving stations where representative stations return an acknowledgments (claimed confirmation messge) to the base station)

65. Inoue does not disclose expressly: wherein the confirmation message relates to one of a successful and unsuccessful decoding of the data after initiation of decoding of the data by the at least one second receiving station

66. Paragraph 0030, Altahan discloses that a mobile station (claimed receiving station) receives data blocks and a receiver may decode (claimed initiation of decoding of the data) the data blocks and may report the successful or unsuccessful decoding of the blocks to a base station, using an ARQ scheme. When a received data block is not decoded successfully, a NACK message (claimed confirmation message) may be sent to the base station, requesting retransmission of the data block. Conversely, when a received data block is successfully decoded, ACK message (claimed confirmation message) may be sent to the base station.

67. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of Inoue by sending a confirmation message relating to successful/unsuccessful decoding of a data packet after a decoding has been initiated, as suggested by Altahan

68. The rationale for doing so would have been to increase the reliability of communicating data packets in a network by utilizing ACK/NACK messages to request retransmissions of erroneously decoded data (Paragraph 30, Altahan).

69. All though the combination of Inoue and Altahan disclose one third receiving station of the plurality of first receiving stations (fig. 3, page 855, Inoue discloses a first, second and third station group of receiving stations of a multicast transmission)

70. wherein the transmitting station is adapted to receive a confirmation message with respect to the data (Page 856, section 3.2, Inoue discloses that the base station receives a NACK frame (claimed confirmation message))

71. from at least one second receiving station of the plurality of first receiving stations (Fig. 4, Inoue discloses that each group of receiving stations will be polled, thus a first, second and third receiving stations will receive a multicast and respond with an ACK or NACK to confirm positive or negate reception of data);

72. and wherein the at least one third receiving station transmits a confirmation message of its own to the transmitting station (Inoue teaches in section 3.1.1 as well as fig. 3, a first, second and third group of receiving stations, wherein the third group comprises one receiving station. Further, as disclosed in section 3.1.1, responses (claimed confirmation message) for a multicast datagram are returned from each station group, thus in station group 3, the station will send a response of its own to the base station. Also see section 3.2 as well as fig. 4).

73. The combination of Inoue and Altahan do not disclose expressly: wherein the transmitting station is adapted to transmit the confirmation message, which it received from at least one second receiving station, to at least one third receiving station.

74. Satran discloses, in Paragraph 0015, a sender (claimed transmitting station) multicasts a negative acknowledgement (claimed confirmation message) to the other receiving stations.

75. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the combination of Inoue and Altahan, by sending a confirmation message from transmitting station to a receiving station, as suggested by Satran.

76. The rationale for doing so would have been to reduce network congestion in order to optimize data flow in a communication network (Paragraph 0013, Satran).

77. **As per claim 19**, the combination of Inoue, Altahan and Satran teach wherein the plurality of first receiving stations is grouped into a plurality of groups (Station group1, Station group2 and Station group3, fig. 3, page 855) of first receiving stations such that (Page 855, section 3.1, Inoue disclose a station must be a member of a station group. The procedure to join or form a station group is described)

78. a first group (Station group1, Fig. 3) includes at least one third receiving station (Fig. 3, station group 1 can have multiple stations) of the plurality of first receiving stations and a second group (Station group2, fig. 3) includes at least one fourth receiving station (Fig. 3, station group2 can have multiple stations) of the plurality of first receiving stations (Figure 3, on page 855 shows an example of multiple groups of receiving stations which are capable of including any number of receiving stations to join the multiple groups);

79. wherein a first feedback phase is assigned to the first group and a second feedback phase is assigned to the second group in accordance with a feedback scheme (Page 856, fig. 4 discloses a means of polling which allows each group to signal back to the source at predetermined intervals of time. **Note that examiner understands feedback phase to be time slots for signaling to the base station or other mobile stations. Also, the examiner understands feedback scheme as means for receiving/sending confirmation messages regarding the decoding of the multicast data**);

80. wherein the at least one third receiving station (Fig. 3, shows multiple mobile stations in multiple groups) sends the confirmation message to the transmitting station (Fig. 3, BS) in accordance with the first feedback phase and the at least one fourth receiving station (Fig. 3, shows multiple mobile stations in multiple groups) sends the confirmation message in accordance with the second feedback phase (Page 856, fig. 4 discloses a means of polling which allows each group to signal back to the source at predetermined intervals of time).

81. wherein, after the transmitting station has received and decoded the confirmation message from the at least one third receiving station of the first group, the transmitting station sends the confirmation message, which it received from the at least one third receiving station of the first group, to the at least one fourth receiving station of the second group (page 856, section 3.2, Inoue discloses where the base station polls the RS of another group after receiving an ACK from the current group. The base station repeats this operation until it receives an ACK frame from the last group. Note that this polling frame sent from the base station to another group signals that all the previous groups have confirmed receiving the multicast message);

82. wherein the feedback scheme is adapted such that the confirmation message of the at least one third station of the first group is decoded at the transmitting station and sent to the at least one fourth receiving station of the second group before the at least one fourth receiving station sends the confirmation message to the transmitting station (page 856, section 3.2, Inoue discloses where the base station polls the RS of another group after a certain time, thus a representative station in a second group will not transmit a confirmation message until it has been sent a polling frame).

83. **As per claim 23**, the combination of Inoue, Altahan and Satran teach receiving station for a data transmission system for a point-to-multipoint data transmission from a transmitting station to a plurality of receiving stations; wherein the receiving station is adapted to receive data sent from the transmitting station to the plurality of receiving stations (page 856, Inoue discloses where the base station transmits a multicast data frame destined to all members of the multicast receiver group in the cell. Also see fig. 4 and section 3.2),

84. wherein the receiving station is adapted to send a first confirmation message to the transmitting station (Fig. 4, Inoue teaches where a first station group returns an ACK (claimed first confirmation message));

85. wherein the first confirmation message relates to one of a successful and unsuccessful decoding of the data after initiation of decoding of the data at the receiving station (Paragraph 0030, Altahan discloses that a mobile station (claimed receiving station) receives data blocks and a receiver may decode (claimed initiation of decoding of the data) the data blocks and may report the successful or unsuccessful decoding of the blocks to a base station, using an ARQ scheme. When a received data block is not decoded successfully, a NACK message (claimed confirmation message) may be sent to the base station, requesting retransmission of the data block. Conversely, when a received data block is successfully decoded, ACK message (claimed confirmation message) may be sent to the base station);

86. wherein the receiving station is adapted to receive a second confirmation message which is sent from the transmitting station, wherein the second confirmation message relates to a decoding of the data at another receiving station of the plurality of receiving stations (Satran discloses, Paragraph 0015, a sender (claimed transmitting station) multicasts a negative acknowledgement (claimed confirmation message) to the other receiving stations.);

87. and wherein the receiving station transmits another confirmation message to the transmitting station (Inoue teaches in Section 3.2 as well as fig. 4, a plurality of station groups receiving a multicast transmission from a base station, where as disclosed step 5 section 3.2 as well as fig. 4, a first ACK is returned to the base station by a Representative Station, however due to failure to properly receive the transmission, a Non-Representative Station returns a NACK. Thereafter, the base station retransmits the data and a second ACK is returned from the polled Representative Station (claimed another confirmation message). Note, as disclosed in section 3.1.2, only a Representative Station returns an ACK.).

88. **As per claim 24**, the combination of Inoue, Altahan and Satran teach wherein said confirmation message is transmitted by the at least one third receiving station when said at least one third receiving station determines based on the received confirmation message transmitted by the transmitting station whether to transmit the confirmation message to the transmitting station (Inoue discloses in section 3.2, step 5, that when Non-Representative Stations listen to the response that the Representative station returned to the base station, if a Non-Representative station fails to receive the multicast data and if the response that the Representative station returned is an ACK, then the Non-Representative station returns a NACK frame).

89. **As per claim 25**, the combination of Inoue, Altahan and Satran teach wherein the at least one third receiving station is adapted to determine based on the received confirmation message whether to transmit the confirmation message of its own to the transmitting station (Inoue teaches in section 3.1.1 as well as fig. 3, a first, second and third group of receiving stations, wherein the third group comprises one receiving station. Further, as disclosed in section 3.1.1, responses (claimed confirmation message) for a multicast datagram are returned from each station group, thus in station group 3, the station will send a response of its own to the base station. Also see section 3.2 and fig. 4).

90. **As per claim 26**, the combination of Inoue, Altahan and Satran teach wherein the receiving station is adapted to determine based on the second confirmation message whether to transmit the another confirmation message to the transmitting station (Inoue teaches in Section 3.2 as well as fig. 4, a plurality of station groups receiving a multicast transmission from a base station, where as disclosed step 5 section 3.2 as well as fig. 4, a first ACK is returned to the base station by a Representative Station, however due to failure to properly receive the transmission, a Non-Representative Station returns a NACK. Thereafter, the base station retransmits the data and a second ACK is returned from the polled Representative Station (claimed another confirmation message)).

91. **Claims 11-12, and 15-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Inoue, Altahan, Satran and further in view of Publication **2003/0207696** to Willenegger et al. (hereinafter Willenegger)

92. **As per claim 11**, although the combination of Inoue, Altahan and Satran teach a method for reliable multicasting, the reference is silent on wherein the method is applied in the context of Multimedia Broadcast Multicast Services in UMTS.

93. However, Willenegger discloses techniques to implement MBMS services in a wireless communication system that cover various aspects of point-to-multipoint transmissions for broadcast and multicast services (Paragraph 0008). Willenegger further discloses that the base station used for multicasting is part of the UMTS Radio Access Network (Paragraph 0023).

94. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the combination of Inoue, Altahan and Satran by incorporating a Multimedia Broadcast Multicast Services as suggested by Willenegger. The suggestion for the modification is because new generation networks would like to support the transmission of various types of data to a wide area of users. This modification would benefit the combination by ensuring that multicast and broadcast of real-time data to a wide area of users at higher speeds can be reliably accomplished.

95. **As per claim 12**, the combination of Inoue, Altahan, Satran and Willenegger teach wherein the confirmation message comprises confirmation data in form of soft bits, wherein a soft-combining of the confirmation message of the at least one third receiving station of the first group with the confirmation message of the at least one fourth receiving station of the second group is performed (Willenegger discloses that MBMS transmission can be coordinated across multiple cells, which would allow autonomous soft combining of the MBMS data by the terminal (Paragraph 0137)).

96. **As per claim 15**, the combination of Inoue, Altahan, Satran and Willenegger teach wherein the confirmation message is transmitted to the transmitting station from at least one sixth receiving station of the plurality of first receiving stations with a first transmission power (Willenegger discloses in Paragraph 0202, where an uplink power control mechanism is implemented to control the transmit power of the uplink transmission)

97. wherein, when a minimum number of sixth receiving stations transmits the confirmation message in accordance with a third feedback phase in accordance with a feedback scheme (Page 856, fig. 4, Inoue discloses a means of polling which allows each group to signal back to the source with an ACK or NACK, at predetermined intervals of time),

98. resulting in a superposition of confirmation messages and therefore in an increase of power received at the transmitting station, the received power at the transmitting station is sufficient for decoding the superposition of confirmation messages (Willenegger discloses in Paragraph 0202, where an uplink power control mechanism is implemented to control the transmit power of the uplink transmission. Thus, during the uplink data transmission, the transmission power can be increased or decreased to a desired level)

99. and wherein, when less than a minimum number of sixth receiving stations transmits the confirmation message in accordance with the third feedback phase, the received power at the transmitting station is not sufficient for decoding the superposition of confirmation messages (Willenegger discloses in Paragraph 0202, where an uplink power control mechanism is implemented to control the transmit power of the uplink transmission. Thus, during the uplink data transmission, the transmission power can be increased or decreased to a desired level)

100. **As per claim 16**, the combination of Inoue, Altahan, Satran and Willenegger teach wherein, after the at least one third receiving station has sent the confirmation message with a second transmission power to the transmitting station in accordance with the first feedback phase, it sends the confirmation message in accordance with the second feedback phase and with a third transmission power; and wherein the third transmission power is higher than the second transmission power (Willenegger discloses in Paragraph 0202, where an uplink power control mechanism is implemented to control the transmit power of the uplink transmission. Thus, during the uplink data transmission, the transmission power can be increased or decreased to a desired level.)

101. **Claims 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Inoue, Altahan, Satran and further in view Patent **6044069** to Wan.

102. **As per claim 13**, the combination of Inoue, Altahan and Satran teach wherein a fifth receiving station of the plurality of first receiving stations determines a fourth group of the plurality of groups of first receiving stations after receiving information about the number of groups of the first receiving stations available for grouping (Page 855, section 3.1.1, Inoues discloses that If there is no other station within the transmission range of that station, the station sends a request to form a new station group because that station could find no station groups to join);

103. wherein, after determination of the fourth group, the fifth receiving station considers itself to belong to the fourth group (Page 855, section 3.1.1, Inoue discloses that if there is no other station within the transmission range of that station, the station sends a request to form a new station group. Then the station is considered as a station group which comprises one station);

104. Although the combination of Inoue, Altahan and Satran teach teaches the determination of another group by a receiving station (Page 855, section 3.1.1, Inoues discloses that If there is no other station within the transmission range of that station, the station sends a request to form a new station group because that station could find no station groups to join),

105. the combination of Inoue, Altahan and Satran teach do not disclose expressly: wherein the determination of the fourth group to which the fifth receiving station considers itself to belong to is performed by the fifth receiving station without additional signaling.

106. However Wan teaches a method for registering mobile stations in a cell located in the same geographic region. Whereby the registration module generates a 6 bit value determined by a hash function combined with a modulo operation, performed on the TMSI or IMSI value (Wan: Col. 17, lines 25-30). Thus, additional signaling back to the base station is avoided.

107. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the combination of Inoue, Altahan and Satran, by incorporating a means for determining a group by a receiver station without a request to the base station as suggested by Wan.

108. The rationale for the modification is because additional signaling may require excessive use of available transmission power. This modification would benefit the system by ensuring the reduction of transmission power needed to create, determine or join groups for receiving multicast messages.

109. **Claims 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Inoue, Altahan, Satran, Wan and further in view of Willenegger.

110. **As per claim 14**, he combination of Inoue, Altahan, Satran and Wan teach wherein the determination of the fourth group to which the fifth receiving station is assigned is performed on the basis of at least one of a random number generated by the fifth receiving station, a modulo operation applied to one of an IMSI and a TMSI of the fifth receiving station (Col. 17, lines 25-30, Wan discloses where the process of registering a mobile station includes generating a 6 bit value determined by a hash function combined with a modulo operation, performed on the TMSI or IMSI value),

111. The combination of Inoue, Altahan, Satran, Wan do not disclose expressly: a determined path loss during the data transmission

112. However, Willenegger discloses in paragraph 0244, where the network collects quality information pertaining to data transmission from the end users (UE terminals) in an MBMS service. This information includes round-trip time, network topology, and path-loss.

113. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the combination of Inoue, Altahan, Satran and Wan by incorporating a means for determining a path loss for data transmission as suggested by Willenegger.

114. The rationale for the modification is because path loss can dramatically affect the quality of service between mobile stations and the base station in a multicasting environment. This modification would benefit the combination of Inoue and Wan by ensuring that a manageable quality of service is maintained by reporting measurements such as path loss for data transmissions.

115. **Claim 22** is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue, Altahan, Satran as well as Patent **6,392,993** to Hamilton et al. (hereinafter Hamilton)

116. **As per claim 22**, the combination of Inoue, Altahan and Satran teach transmitting station for a data transmission system for a point-to-multipoint data transmission from the transmitting station to a plurality of receiving stations (page 856, Inoue discloses where the base station transmits a multicast data frame destined to all members of the multicast receiver group in the cell),

117. wherein the transmitting station is adapted to transmit data from the transmitting station to the plurality of receiving stations (page 856, Inoue discloses where the base station transmits a multicast data frame destined to all members of the multicast receiver group in the cell);

118. wherein the transmitting station is adapted to receive a confirmation message with respect to the data from at least one first receiving station of the plurality of receiving stations (Page 856, section 3.2, Inoue discloses that the receiving stations, which can be a Representative Station, or a Non-Representative station, return a NACK if the data was not received correctly);

119. wherein the confirmation message relates to one of a successful and unsuccessful decoding of the data after initiation of decoding of the data at the at least one first receiving station of the plurality of receiving stations (Paragraph 0030, Altahan discloses that a mobile station (claimed receiving station) receives data blocks and a receiver may decode (claimed initiation of decoding of the data) the data blocks and may report the successful or unsuccessful decoding of the blocks to a base station, using an ARQ scheme. When a received data block is not decoded successfully, a NACK message (claimed confirmation message) may be sent to the base station, requesting retransmission of the data block. Conversely, when a received data block is successfully decoded, ACK message (claimed confirmation message) may be sent to the base station);

120. wherein the transmitting station is adapted to transmit the confirmation message, which it received from the at least one first receiving station, to at least one third receiving station of the plurality of receiving stations (Satran discloses, Paragraph 0015, a sender (claimed transmitting station) multicasts a negative acknowledgement (claimed confirmation message) to the other receiving stations.);

121. and wherein the transmitting station is adapted to retransmit the data if the confirmation message relates to an unsuccessful decoding of the data (Fig. 4, Inoue discloses that when a NACK is returned (claimed unsuccessful decoding of the data), the base station retransmits the multicast data.)

122. Although the combination of Inoue, Altahan and Satran disclose at least one third receiving station (Inoue teaches in Fig. 3 as well as Fig. 4, a first, second and third group of receiving stations of a multicast transmission)

123. The combination of Inoue, Altahan and Satran do not disclose expressly: ignore another confirmation message received.

124. Hamilton teaches in Col. 3, lines 55-63, a NAK suppression technique where in response to a NAK the sender will retransmit the missed packet. Any additional NAKs received by the sender for the same packet will be ignored for a predetermined period of time after retransmission of the packet.

125. Inoue, Altahan, Satran and Hamilton are analogous art because they are from similar problem solving areas dealing specifically with transmission/retransmission schemes to communicate data packets in a network.

126. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the combination of Inoue, Altahan and Satran by ignoring a confirmation message as suggested by Hamilton.

127. The rationale to do so would have been to enhance reliability in a large communication network by employing NAK suppression techniques to avoid congestion (Col. 3, lines 51-55, Hamilton)

128. Therefore it would have been obvious to combine Hamilton with Inoue, Altahan and Satran for the benefit of reducing congestion to enhance communication reliability, to obtain the invention as specified in claim 22.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached at (571) 272-3011. The fax phone number for the organization where this application or proceeding is assigned is. 571-273-8300

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/YOSIEF BERHANE/

Examiner, Art Unit 2467

/Hong Cho/

Primary Examiner, Art Unit 2467